

SPECIFICATION

Atty Dkt: F-8632

Identifier: Peter KRAUSE, et al.

Claims:

1. Method for the disintegration and tribochemical activation in particular of inorganic materials, characterized in that the starting materials are comminuted (disintegrated) to a particle size of less than 1 μm by the effect of impact pressure fronts that occur as compression shocks on profiles are moved transonically, with a pulse duration of 10 μs and a repetition rate of greater than 8 kHz.
2. Method in accordance with claim 1, characterized in that during the disintegration of materials with a crystalline structure a conglomerate of activated mixed crystals is produced that has an increased capacity for crystal formation when water is added.
3. Method in accordance with claim 1, characterized in that the effective duration of said impact pressure fronts (4) lasts until the crystal lattice structure of said particles (30) has been destroyed.
4. Method in accordance with claims 1 and 3, characterized in that said impact pressure fronts occur due to rotating shaped bodies (1) that have aerodynamically formed profiles and that are accelerated to the transonic speed range.

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5. Method in accordance with claims 1, 3, and 4, characterized in that said particles are subjected to impact pressure fronts (4) of shaped bodies (1) that are rotating in opposition to one another.

6. Method in accordance with claims 1 through 5, characterized in that the disintegration takes place under protective gas.

7. Apparatus for disintegration and tribochemical activation of in particular inorganic materials, characterized in that arranged on rotating disks (15, 16) are shaped bodies (1) that have an aerodynamically shaped profile and that are continuously moved in the transonic speed range and that produce impact pressure fronts on their off-flow surfaces.

8. Apparatus in accordance with claim 7, characterized in that said impact pressure fronts are produced by shaped bodies (1) that have an aerodynamically shaped profile and that are arranged on disk-shaped rotors (15, 16) that move in opposition to one another in the transonic speed range.

9. Apparatus in accordance with claims 7 and 8, characterized in that the rate of repetition of said impact pressure fronts varies and frequency portions of the rate of repetition of > 15 kHz occur in the supersonic range.

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10. Apparatus in accordance with claims 7 through 9, characterized in that the forward front of said shaped bodies (1) is rounded and its off-flow surfaces meet at an acute angle.
11. Apparatus in accordance with claims 7 through 10, characterized in that the section of said shaped body (1) has a non-critical profile.